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November 12, 2008

Monk Goodwin LLP
800-444 St. Mary's Road
Winnipeg, MB R3C 3T1

Attention: Mr. Larry J. Bird

Re: Jim and Heidi Schadek Residence
[redacted], Headingley, Manitoba

Dear Mr. Bird:

Mr. John Rocke, P. Eng, of Beach Rocke Engineering Ltd. carried out an investigation of the Jim and Heidi Schadek residence, presently under construction at [redacted] Street, Headingley, Manitoba on Monday, November 3, 2008, followed by a subsequent visit on Wednesday, November 12, 2008. The investigation and following report were requested by Mr. Larry J. Bird of Monk Goodwin LLP on behalf of the home owners. Beach Rocke Engineering Ltd. was asked to address the following deficiency noted on an inspection report prepared by Ray Muller, the Local Building Inspector and dated October 20, 2008.

> "Basement floor, web joists shall have a minimum 6" clearance from the underside of the joist to ground cover. Joists installed on site are tight to the ground and have lifted in several areas."

Beach Rocke Engineering Ltd. conducted a cursory inspection of the overall building in order to determine the condition and behaviour of the foundation. The overall building, including the wood-framed superstructure however, was not inspected for condition and performance as the request was limited to the specific item noted above.

The following observations were noted by Mr. John Rocke, P. Eng. on Monday, November 3, 2008:

(See Drawing S-1 of 3)

1. The height of the concrete foundation wall had been reduced to 9'-10" from 10'-8" as specified on the construction documents. The basement floor to ceiling height had been maintained at 9"-0" as required by the construction drawings.
2. The 2x10 treated wood ladder required at the top of the basement foundation wall to facilitate fastening of the main floor joist system to the wall had been omitted by the contractor. This would require that an alternate detail be provided, which at this point has not been investigated by the author for structural integrity.
3. The underside of the Basement floor joists were tight to the ground cover and less than 6" of clearance was provided as required by the National Building Code, confirming Mr. Ray Muller's observations.
4. There was evidence of standing water in the crawl space at several locations, indicating that appropriate grading and drainage requirements had not been undertaken. Grade levels for the crawl space had not been constructed as noted on the drawings and sump pits and pumps were not activated at the time of the writer's investigation.
5. Several of the basement floor joists had been forced off the double 2x6 treated wood ledgers in two locations. It was the writer's observation that this was the result of forces from the clay soils expanding from excessive moisture contents.
6. The exterior perimeter backfilling of the foundation excavation had been completed, however, the basement level floor sheathing and blocking had not been installed. It is the writer's observation that such backfilling should not be undertaken until the basement floor system has been completely installed, to ensure adequate bracing of the foundation wall can be provided by the floor system as intended.
7. A minimum 2" thick layer of granular ballast was not evenly distributed over the entire crawl space and it was observed that the Polyethylene Vapour Barrier was not sealed as is the conventional practice for such spaces.

The following observations were noted by Mr. John Rocke, P. Eng. on Wednesday, November 12, 2008: (See Drawing S-2 of 3)

1. Some remedial actions had been undertaken by Mannington Homes Ltd. to address the code issue identified by Mr. Ray Muller. These included:
    - The Basement floor was raised 1½" by installing a new 2 x 4 continuous nailer over the existing floor support system.
    - The grade under the basement floor joists has been lowered to provide 6" of clearance between the lower chord of the joists and the crawl space soil as required to satisfy the Building Code.

Beach Rocke Engineering Ltd. recommends that the following remedial work be undertaken to ensure the structural integrity of the foundation: (See Drawing S-3 of 3)

1. Basement Floor Joists:
    - The Basement Floor Joist Manufacturer should confirm that the floor members lifted off their supports by the soil movement have not been structurally damaged. The Manufacturer should also confirm that the bottom chord of the floor trusses can be cut back to further increase ground clearance.
    - The Basement floor sheathing and blocking should be installed immediately to ensure that lower portion of the foundation wall is adequately braced from lateral earth pressures caused by the backfilling. Alternatively, the backfilling must be removed until the basement floor system has been completely installed.

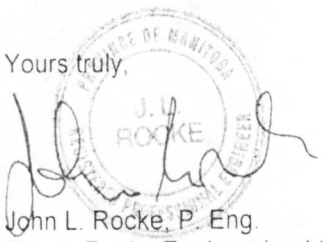
2. Crawl Space Grading and Drainage:
    - The crawl space should be regraded to provide a minimum of 2'-0" clearance under the floor joists, except at the exterior walls as previously identified. In all cases the grade shall be sloped to positively drain to the two sump pits provided – no areas should remain level or flat where water could pond.

- Sump pits should be installed and activated immediately to ensure that water does not collect in the crawl space excavation.
- The joints of the Polyethylene vapor barrier should be sealed together, and also secured to the foundation walls. A minimum 2" sand ballast should be evenly distributed over the complete crawl space area.

3. Main Floor Framing:
   - Further investigation may be required to ensure that main floor joists are adequately secured to the foundation wall and interior support systems, and that appropriate end wall blocking and bridging has been installed correctly.

Trusting this is Satisfactory.

Yours truly,



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